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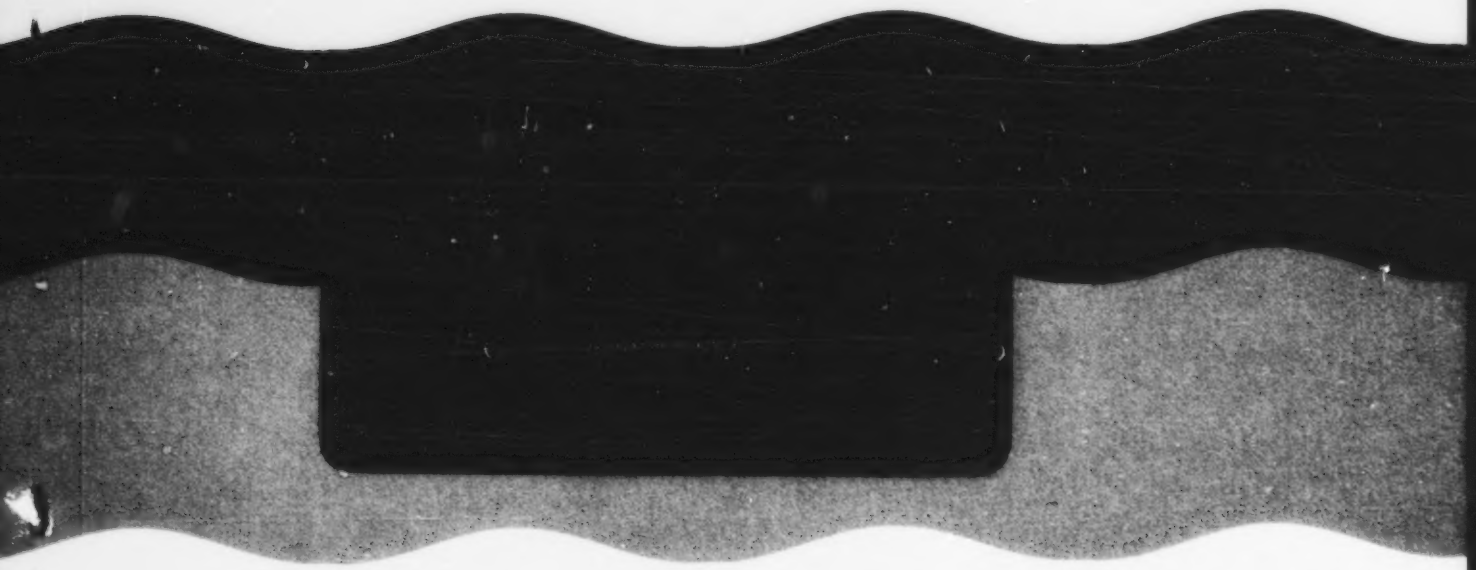
TP 1624

Marine Casualty Investigations

Enquêtes sur les accidents maritimes



Investigation Report to the Minister pursuant to sections 477 or 480 of the Canada Shipping Act (1985)

Rapport d'investigation au Ministre conformément aux articles 477 ou 480 de la Loi sur la marine marchande du Canada (1985)

Canada

91-00198/

Ce rapport est aussi disponible en français.

REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES SURROUNDING THE LOSS OF THE CREW FROM THE CANADIAN FISHING VESSEL "JORDAN PRIDE" IN JORDAN BAY, NOVA SCOTIA. FEBRUARY 26, 1990.

REPORT No. 546.

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REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES SURROUNDING THE LOSS OF THE CREW FROM THE CANADIAN FISHING VESSEL "JORDAN PRIDE" IN JORDAN BAY, NOVA SCOTIA. FEBRUARY 26, 1990

Particulars of vessel

Name	"JORDAN PRIDE"
Port of Registry:	Shelburne, N. S.
O.N.	812443
CFV Number:	102003
Gross Tonnage:	12.63
Net Tonnage:	5.65
Length:	10.82 m (35.50 Ft.)
Breadth:	4.08 m (13.42 Ft.)
Depth:	1.86 m (6.10 Ft.)
Draught:	0.99 m (3.25 Ft.) (estimated at the time of the incident)
Freeboard:	0.86 m (2.82 Ft.) (least, measured to the top of gunwale cap)
Type:	Inshore Lobster Fishing Vessel
Built:	1989, South Side, Cape Sable Island, N. S.
Construction:	GRP
Propulsion:	One 175 kWb (210 BHP) six cylinder turbo-charged diesel. Cummins Engine Co. Built: 1989
Owner:	Joseph Delbert Acker, Shelburne, N. S.

NOTE: (1) All times in this report are expressed in Atlantic Standard Time (UTC minus 4 hours).

(2) All references to the Canada Shipping Act in this report refer to Chapter S-9-1985 of the Revised Statutes of Canada.

Description of vessel

The "JORDAN PRIDE" is a small fibre-glass fishing vessel adapted for inshore lobster fishing. The principle features of the vessel are; a raised enclosed forecastle, wheel-house, well deck, and square transom. The cuddy (forecastle), accessed through the wheel-house, is arranged to accommodate crew. The wheel-house is located immediately aft of the break of the forecastle. It is a partially enclosed structure open at the after starboard corner. The engine and power train are located amidships below deck. A hydraulic power hauler (winch) is fitted on the starboard bulwark adjacent to the wheel-house entrance (see photographs).

The "JORDAN PRIDE", being a small fishing vessel of less than 15 tons gross tonnage, is exempt from inspection by the Ship Safety Branch of the Canadian Coast Guard.

Particulars of missing persons

Name:	Joseph Delbert Acker	Malcolm St.Clair Acker
Position on board vessel:	Skipper	Deck-hand
Age:	24	41
Address:	Shelburne, N.S.	Jordan Bay, N.S.

Background

The lobster fishing vessel "JORDAN PRIDE" was discovered abandoned between 1100 and 1200 on February 26, 1990. The vessel had departed from Lower Jordan Bay fishing harbour earlier that same day to fish for lobsters in the adjacent waters. In the course of the morning an observer ashore noticed that the "JORDAN PRIDE" was making unusually slow progress in the vicinity of The Sisters rocks. The observer relayed his concerns to other members in the community, including relatives of the crew. No immediate action was taken. Later, when radio contact could not be established with the "JORDAN PRIDE", another fishing vessel in the same area proceeded towards her. On approaching the "JORDAN PRIDE" it became evident that the crew was not aboard. The alarm was raised initiating a surface and sub-sea search lasting several

days. As of this date, no trace of the crew has been found. The "JORDAN PRIDE" had a complement of two.

Narrative

The "JORDAN PRIDE" left from Lower Jordan Bay harbour at 0700 to tend to lobster traps within the waters of Jordan Bay. A round trip, working traps, would normally take five to six hours.

From the harbour the "JORDAN PRIDE" proceeded to a location close to buoy KS52, west south west of Blue Gull Island, to tend to the first set of traps for this day. During the course of the morning the vessel was observed to work its way towards The Sisters rocks passing a point approximately 1.5 nm south of The Sisters rocks at 0830. At 0900 the skipper's wife called the vessel once on 156.3 Mhz (VHF channel 6), but did not establish contact with the vessel. No further attempt was made by the skipper's wife to contact the vessel as she was about to depart for work, leaving almost immediately after calling. The lack of immediate response from the "JORDAN PRIDE" was not considered particularly unusual, only one call was made and the crew could easily have been occupied with other priorities. No other communications involving the "JORDAN PRIDE" are known to have been made that morning with the exception of those attempts to contact the vessel following concern for the crew.

At 0900 a neighbouring fisherman on shore noticed the "JORDAN PRIDE" in the vicinity of The Sisters rocks. At 1045, he noticed that the "JORDAN PRIDE" was still in the same area. Finding this unusual, and suspecting that the crew may be experiencing some difficulty, he requested a colleague to make radio contact with the "JORDAN PRIDE".

Two attempts were made to contact the "JORDAN PRIDE" on VHF channel 6. Contact was then made with the "JORDAN WAVE", operated by a brother of the two men on the "JORDAN PRIDE", advising that contact could not be established with that vessel and suggesting that the matter should be investigated.

The skipper of the "JORDAN WAVE", not noticing anything unusual about the vessel, presumed that they were busy repairing gear damaged by the stormy weather of the previous day and decided not to take any immediate action. At this time the "JORDAN WAVE" was working traps in the vicinity of Jordan Point, approximately 1.5 miles from The Sisters rocks. After completing the work in hand the skipper of the "JORDAN WAVE" called the "JORDAN PRIDE" once on VHF channel 6. Not receiving any reply, he proceeded towards the "JORDAN PRIDE" to investigate, arriving there at approximately 1130.

The skipper of the "JORDAN WAVE" boarded the "JORDAN PRIDE"

to quickly discover that there was no trace of the crew on board with the exception of the deck-hand's hat, which lay on the deck just abaft the entrance to the wheel-house.

The engine was still running; the clutch was set astern, the throttle almost at the idle position. The VHF radio set was switched on and functioning; communications between vessels working VHF channel 6 were audible without making any adjustments to the set. Both the Loran-C and echo sounder were switched on and functioning. No other navigational gear was in use.

The vessel was anchored, stern towards the tidal stream, by her trawl line and fourteen traps in position 43° 43.35'N 65°13.15'W. Tension on the trawl line was light, the tension being partially relieved by the sternway of the vessel. The eleven remaining traps of the set were stacked, undisturbed, on the deck. The gaff used to retrieve the trawl line buoy was on the deck, port side, where it is customarily kept when not in use.

The skipper of the "JORDAN WAVE", using the VHF radio on the "JORDAN PRIDE", contacted his brother on the fishing vessel "PJ", relating to him the situation on board. This transmission took place at approximately 1250. The information was also received by family and friends ashore who reported the matter to RCMP Shelburne and CCGS "ALERT". The Rescue Co-ordination Centre (RCC) was informed and Search and Rescue (SAR) resources were tasked to search the area at 1213.

After talking to his brother on the fishing vessel "PJ" the skipper of the "JORDAN PRIDE" attempted to recover the traps in the water, however, the trawl line had been damaged just below the water, and parted under strain. The skipper of the "JORDAN WAVE" then left for Lower Jordan Bay with the "JORDAN PRIDE" followed by his own vessel under the con of the deck-hand.

The search continued until 1959, February 26, 1990, and was then turned over to the RCMP as a 'missing persons' case. Local resources continued to search the area until March 11, 1990. No trace of the missing crew was found.

Analysis

1. Weather

The weather forecast issued for the Southwest Shore at 0530 February 26 called for northeast winds 25 to 35 knots backing to northerly 20 to 30 knots through the morning, air temperature near -8°C, flurries, visibility fair in flurries.

Conditions in Jordan Bay as observed from the "JORDAN WAVE"

that morning were; winds northerly 10 to 15 knots, sea 1 to 2 metres.

There is no specific evidence relating weather conditions with this accident.

2. Tidal Conditions

On February 26th, the first high water of the day in Jordan Bay occurred at 0904. Low water occurred at 1519. The corresponding range of tide was 2.1 m.

Those with local knowledge of the area claim that the ebb tide would flow in a direction parallel with the shore line at a rate of approximately three knots.

3. Condition of vessel

The "JORDAN PRIDE" is a new vessel, the owner having taken delivery October 1989. The vessel is maintained in a condition appropriate to the time in service.

There were no design features which would render this vessel more susceptible to an accident of this type than any other vessel of the same class.

4. Life-saving equipment

The "JORDAN PRIDE" was equipped with: one, four man capacity, inflatable life-raft; one 762 mm lifebuoy, three lifejackets, one survival suit, and 12 distress flares. All of these items, with the exception of the liferaft, were found in the cuddy after the accident, and were thus not immediately to hand.

5. Equipment

The equipment used to fish for lobsters by the "JORDAN PRIDE" consisted of a series of lobster traps attached to a 9.5 mm polypropylene rope. The arrangement is referred to as a string of traps; the polypropylene rope is referred to as the trawl line. Each end of the trawl line is fitted with a buoy for the purpose of marking the location of the string of traps and to facilitate recovery. A gaff is used to recover the trawl line from the water.

A string of traps consists of 25 traps attached at 25 metre intervals along the trawl line. Each trap is attached to the trawl line by a rope bridle one to two metres in length made of similar material. The traps were the wire cage type. A trap, including ballast, weighs approximately 10 kg.

6. Procedure

At the opening of the fishing season strings of lobster traps are set on the ocean floor at suitable locations. The traps generally remain in the water for the duration of the season.

During normal operations the traps are recovered on a daily basis to remove the catch and replace bait.

A string of traps is recovered by locating one end of the trawl line, engaging it in the power hauler and hoisting each trap in turn to the surface.

To achieve this the skipper will manoeuvre the vessel up to one of the buoys attached to the trawl line. The deck-hand recovers the trawl line using a gaff.

The trawl line is transferred to the skipper who engages it in the power hauler to bring the first trap to the surface whilst coiling the trap line on the deck below the power hauler. Once the bridle of the first trap reaches the power hauler, the hauler disengages, permitting recovery of the trap inboard by the crew. At this point the trap will be opened, catch removed, and bait replaced if necessary, then closed. The deck-hand will then remove the trap and place it on the middle of the deck against the back of the wheel-house.

This routine is repeated with each trap being stowed systematically, starting from forward to aft, until a stack of traps is created along the centre line six long and four high. Bights of trawl line are drawn along the deck between each trap and the coil of trawl line below the power hauler.

Once serviced, trap 25 is relocated and held in place by the deck-hand on top of the gunwale, starboard side aft. The trap string is now ready for resetting on the ocean floor.

The vessel is now given headway to take up slack on the remainder of the trawl line which has not been removed from the water. Immediately tension is created on the trawl line by the drag of the marker buoy, trap 25 is jettisoned. The deck-hand then removes trap 24 from the stack, places it on the gunwale in the same fashion as the previous trap.

He again waits until headway has taken up most of the slack before jettisoning trap 24. This ensures proper distribution of the traps on the ocean floor and prevents the formation of knots and bights in the trawl line.

This routine is continued, jettisoning traps in reverse order, until the complete string of traps is reset. The position of

the deck-hand throughout the jettisoning procedure is inboard of the trap line.

From beginning to end, the whole procedure normally takes about 20 minutes.

The division of tasks is as follows: Skipper conning and hauling. Recovery of traps inboard done by one or both men. Removal of catch and rebaiting generally done by the skipper. Stacking and jettisoning of traps is done by the deck-hand.

7. Experience and Qualifications

Both men were career fishermen engaged in family-owned fishing ventures harvesting lobsters, mackerel and herring in inshore waters within a radius of 50 to 60 miles from Jordan Bay.

Both men were considered by the family to be proficient in the work being conducted at the time of the accident.

Neither of the two men held Marine Certificates of Competency, nor were they required to for this class of vessel.

Neither of the two men had received any formal training in marine safety.

8. Possible cause of the accident

As there are no direct witnesses and as no trace of the crew has been found to this date, the actual cause of this accident is not known.

It is conceivable that the deck-hand was knocked or carried overboard by the trap string.

The unusual position of the engine controls would suggest that the skipper may have taken action in response to a 'man overboard' situation.

Noting that no call for assistance had been reported, no flotation equipment was missing and that the gaff was found on the port side of the deck, it is conceivable that the first reaction of the skipper may have been to hand-assist the man in the water, particularly as the lifering was not stowed on deck.

Bearing in mind the difficulty in recovering a person from the water, the man being a non-swimmer without flotation gear, his possible state of panic, the body weight differential between the two (deck-hand approximately 80 kgs, skipper 63 kgs) and the possibility of icy surfaces, it is very likely

that the skipper may have slipped or was pulled overboard. The skipper, not being a swimmer and not wearing flotation gear, may then have succumbed to the same plight as the man whom he was trying to assist.

Neither was wearing flotation gear. Their only hope was to grasp the trawl line leading over the stern between traps number 14, already set, and number 15 which was still on board. Even if they were able to grasp the trawl line it is considered virtually impossible to pull oneself on board given a small diameter line, relatively high freeboard and freezing temperatures.

9. Previous accidents

Marine Casualty Investigations records for the period 1975 to 1989, inclusive, reveal that 71 fatalities have been attributed to personnel falling overboard from fishing vessels. Of the 71 fatalities, 10 were attributed to personnel being carried overboard by fishing gear.

10. Hazards

The following hazards are identified in association with the tasks being performed.

There is always a danger of falling overboard when working on small vessels, particularly in close proximity to the side of the vessel. Unless the weather conditions are favourable, a small vessel does not provide a stable work platform. Personnel are therefore vulnerable to loss of balance if caught unawares. The deck-hand working on the after deck would be expected to be most at risk since suitable support may not be immediately at hand. The sea state within the bay at the time of the incident is not considered to have been dangerous in itself.

Deck areas were slippery due to low air temperature acting on the water draining from recovered traps and lines.

The sea temperature being approximately 3°C, the survivability of a person in the water is severely reduced without the benefit of thermal/flotation gear.

A Canadian Red Cross Society publication entitled 'Cold Water Survival' graphically (see Annex I) shows that a person's chance of survival in a seawater temperature of 5°C is strong if rescued immediately and that they can help themselves for up to 35 minutes. After 35 minutes and up to 1.5 hours in the water, persons have a 50% possibility of survival. The times are average predicted survival times of adult humans. The

figures are based on experimental cooling of average men and women who are holding still in ocean water and wearing a standard lifejacket and light clothing. Predicted survival time is increased by extra body fat and decreased by small body size.

Occasionally traps will catch at the turn of the bilge or between the trawl line and the hull, causing the crew to lean further over the side than usually necessary to lift the trap inboard.

There is a distinct danger of personnel being caught in the trawl line during the setting of traps. This is primarily due to the manner in which the trawl line is arranged on deck with bights flaked out to each trap.

If, during streaming, the trawl line fouls, bights of rope can be thrown up from the coil endangering those who may come in contact with the snarled line. The snarled line also reduces the length of trawl line between traps causing traps to be pulled from the stack without warning. This hazard is compounded with vessel speed. Knots and knotted bights in a trawl line are common causes of trawl line fouling.

There were 23 quick splices (formed by joining the broken ends of the trawl line with a reef knot and tucking each end of the line into its respective standing part) and 14 knots/bights counted in the trawl line being worked at the time of the accident.

11. **Search efforts**

Surface search efforts were begun almost immediately by local citizens and local fishing vessels in the area at the time the two men were discovered missing.

The Rescue Co-ordination Centre was informed on the situation by 1152, February 26, 1990. RCMP Shelburne was informed by 1157. By 1215 two Coast Guard vessels and three aircraft were tasked with search and rescue duties.

At 1330 a local dive team co-ordinated by the RCMP departed from Lower Jordan Bay Harbour to conduct an underwater search along the remainder of the trap line last worked on by the "JORDAN PRIDE".

At 1340 the first air and sea Search and Rescue units arrive on scene. By 1515 all Search and Rescue units were on scene covering the shoreline and waters of Jordan Bay including the seaward approaches to Jordan Bay.

By 1727 the search effort was supplemented by the first of three fishing draggers which were to sweep the bottom between Blue Gull Island and The Sisters rocks.

At 1959 the case was closed by the Rescue Co-ordination Centre and turned over to the RCMP as a 'missing persons' case after a fruitless surface and sub-sea search of Jordan Bay and the surrounding coastline. Pending the arrival of an RCMP dive team, CCGS "ALERT" was requested to remain on scene to provide support.

By 2140 the fishing draggers completed their sweep of the bay ending the day's search activities.

A search carried out by family and friends continued throughout the following days; initially with the assistance of CCGS "ALERT", a Department of Fisheries and Oceans Helicopter and the RCMP dive team. All support services were withdrawn by 1700, March 1, 1990 with the exception of the RCMP dive team which revisited the scene for one day on March 11 1990.

Despite all attempts, no trace of the two men was discovered.

Findings

The circumstances which resulted in the crew being lost from the "JORDAN PRIDE" are not known, however, the following factors may have contributed to this accident:

- the deck-hand may have been carried overboard during the trap recovery or trap setting operation;
- the deck-hand, not being a swimmer and not wearing any flotation gear, was in immediate danger;
- since there is no evidence of flotation or recovery equipment being used, but as there is evidence that manoeuvring action was taken, it is probable that the skipper's first reaction was an attempt to hand-assist the deck-hand;
- the skipper may have been pulled overboard while assisting the deck-hand, and
- the skipper was a non-swimmer and did not use any flotation gear.

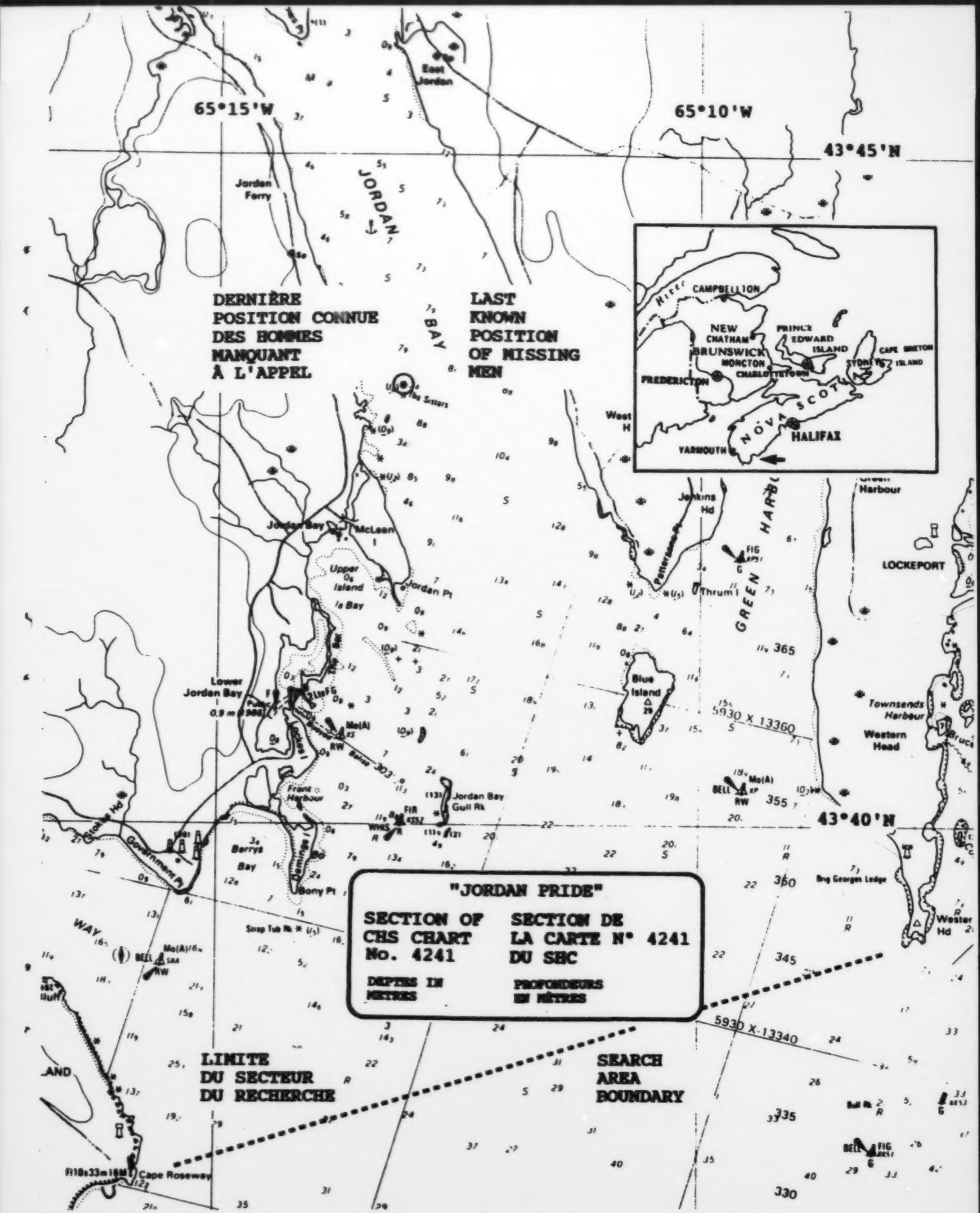
Other Findings

The lifebuoy was not stowed in a position readily accessible from the working deck.

No radio call for assistance was heard.

There is no means of embarkation from the water.

Marine Casualty Investigations
110 O'Connor Street
OTTAWA, ONTARIO
K1A 0N5
September, 1990


65°15'W
65°10'W
43°45'N
43°40'N
JORDAN BAY
DERNIÈRE POSITION CONNUE DES HOMMES MANQUANT À L'APPEL
LAST KNOWN POSITION OF MISSING MEN
East Jordan
Jordan Ferry
Jordan Bay
McLean I
Upper Island
Jordan Pt
Lower Jordan Bay
Front Harbour
Jordan Bay Gull Rk
Government Pt
Berrys Bay
Bony Pt
Soup Tub Rk
Cape Roseway
Fl 10s 33m 18M
Jenkins Hd
Thrum I
Blue Island
GREEN HARBOUR
LOCKEPORT
Townsends Harbour
Western Head
Bng Georges Lodge
Wester Hd
5930 X 13360
5930 X 13340
West H
NEW BRUNSWICK
PRINCE EDWARD ISLAND
CAPE BRETON ISLAND
FREDERICTON
CHARLOTTETOWN
SYDNEY
NOVA SCOTIA
HALIFAX
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"JORDAN PRIDE"
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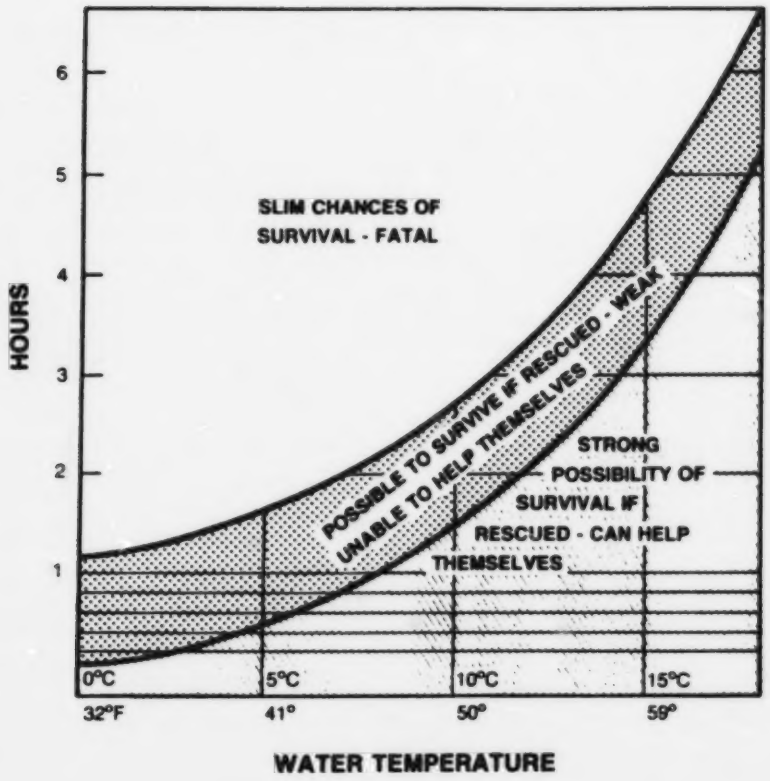
DEPTHS IN METRES
PROFONDEURS EN MÈTRES
LIMITE DU SECTEUR DU RECHERCHE
SEARCH AREA BOUNDARY

ANNEX 1

COLD WATER SURVIVAL



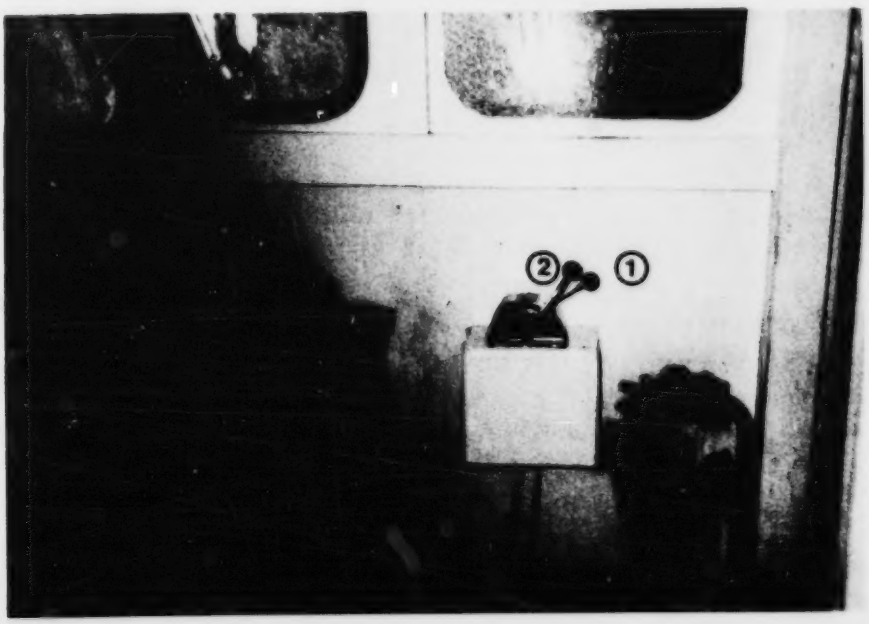
The accompanying graph shows average predicted survival times of average, adult humans in water of different temperatures. The figures are based on experimental cooling of average men and women who were holding still in ocean water and wearing a standard lifejacket and light clothing. The graph shows, for example, that predicted survival time is about 2½-3 hours in water of 10°C (50°F). Predicted survival time is increased by extra body fat and decreased by small body size. Although women generally possess slightly more fat than men they cool slightly faster due to their usually small body size. However, for comparable sizes, the man will cool faster.

"COLD WATER SURVIVAL"
CANADIAN RED CROSS

"JORDAN PRIDE"

View showing the access to the wheel-house. The power hauler used to recover the lobster traps is seen on the bulwark in line with the operator.

Vue d'ensemble montrant l'access à la timonerie.
Le treuil mécanique utilisé pour récupérer les casiers à homard est en vue sur le pavois aligner avec l'operateur.



The engine controls; clutch (1) and throttle (2), adjusted to replicate the position in which they were found when the vessel was discovered abandoned.

Les commandes du moteur, soit l'embrayage (1) et l'accélérateur (2) ont été replacées dans la position à laquelles elles ont été trouvées quand on a retrouvé le bateau abandonné.

"JORDAN PRIDE"

The string of traps to which the "JORDAN PRIDE" was found moored on February 26, 1990.

Quand on a trouvé le "JORDAN PRIDE" le 26 février 1990, il était retennu par ce jeux de casiers.